



Main Features:

- Frequency Range: 27.5 to 31 GHz.
- Typical values: Gain 50 dB, Psat 42 dBm
- RF connectors (I/O): 2.92 mm (F) / WR28
- Sub-D for control and DC connection
- Several mounting options
- Hi-reliability and dedicated screening/ environmental tests available under request

ERZ-HPA-2700-3100-43

The ERZ-HPA-2700-3100-43 is a High-Power Amplifier based in GaN, providing a gain of 50 dB with a Psat of 42 dBm. The compact size and modularity makes it ideal for a wide range of applications.

Typical applications:

- Industrial / Laboratory
- Satcom / Telecom
- Space / Aerospace / Military

Performance

Parameter	Value			Units
	Min	Typ	Max	
Frequency	27.5	-	31	GHz
Output Power (Psat)	41	42	43	dBm
Small Signal Gain	46	50	55	dB
Gain Flatness	-	±4	-	dB
VSWR input	1.2:1	1.8:1	2.5:1	-
VSWR output	1.0:1	1.2:1	1.5:1	-
DC Voltage	24	28	32	V
Power Consumption @PSat	-	115	120	W
RF Connectors	2.92 mm (F) IN/ WR28 OUT			-

Specifications at a case temperature of 25°C at 28 V

Output Power at saturation

Figure 1 shows output power at saturation measurement as a function of frequency at different temperatures.

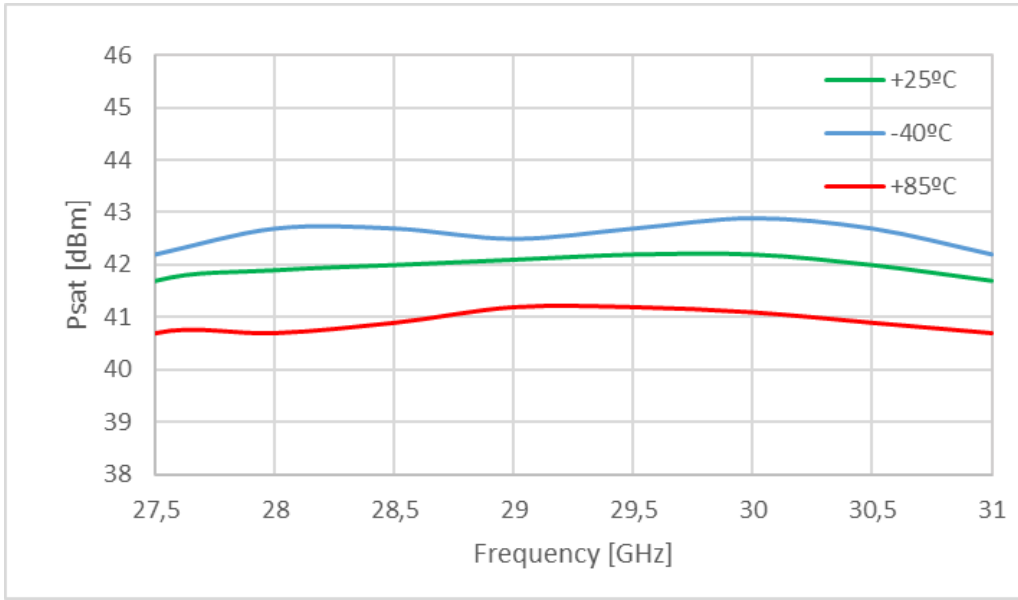


Figure 1: ERZ-HPA-2700-3100-43 Psat

Small Signal Gain

Figure 2 shows the small signal gain measurement as a function of frequency at different temperatures.

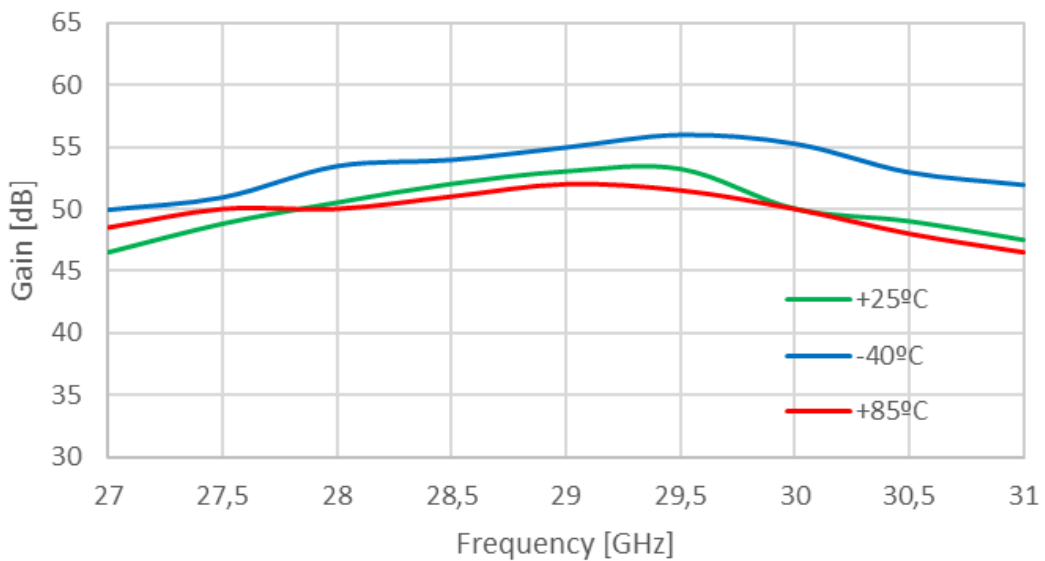


Figure 2: ERZ-HPA-2700-3100-43 Small Signal Gain

Input and Output Matching

Figure 3 and Figure 4 show input (S11) and output (S22) VSWR as a function of frequency at room temperature (25°C).

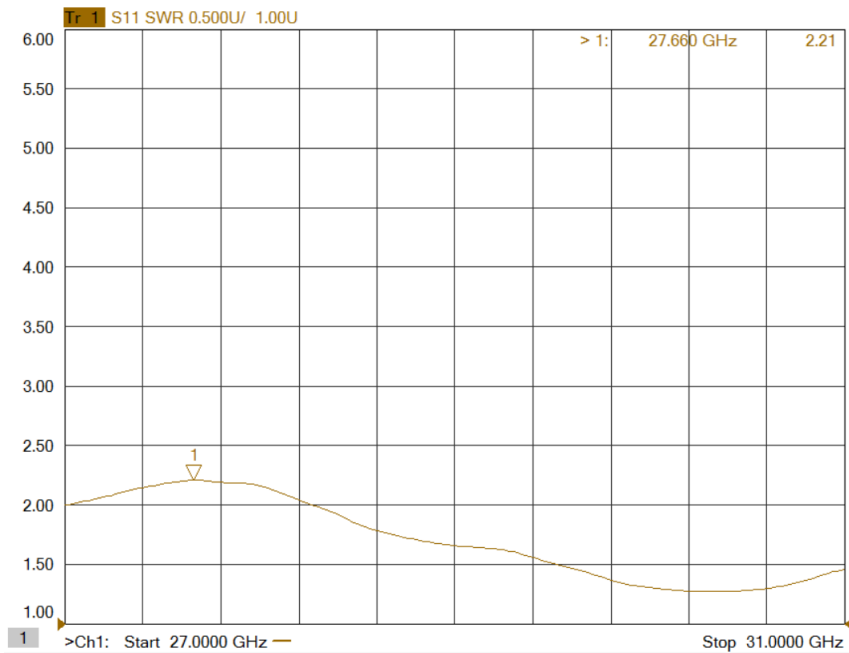


Figure 3: ERZ-HPA-2700-3100-43 Input Matching

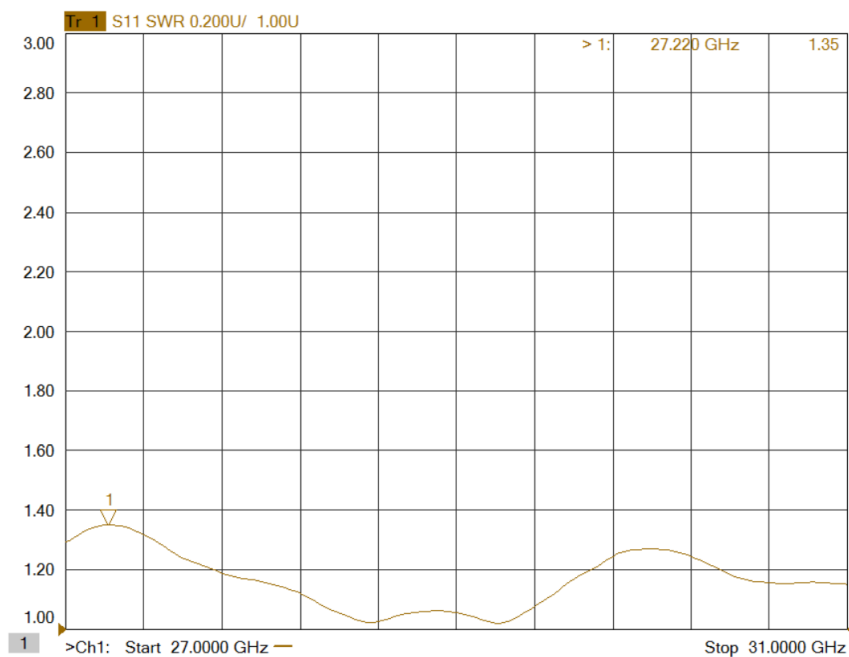


Figure 4: ERZ-HPA-2700-3100-43 Output Matching

Absolute Maximum Ratings

Condition	Value
DC Voltage	+32 VDC
Maximum Input Power (CW)	10 dBm
Operation temperature (at case)	-40 to 85 °C
Storage temperature	-55 to 125 °C

- Stress above these ratings may cause permanent damage to the device.
- It is final user responsibility to maintain the amplifier within the specified ranges.

Measurements Conditions

All measurements provided in this report were performed at the following conditions:

Condition	Value
Temperature (DUT ON)	25 °C ± 1°C
Humidity	44% ± 10%
DUT Warm up time	30 min
DUT minimum operation time	24 hours
Test equipment warm up time	2 hours
Additional temperature cycles in climatic chamber (DUT OFF)	-40°C to 85°C

Environmental Specifications (By Design)

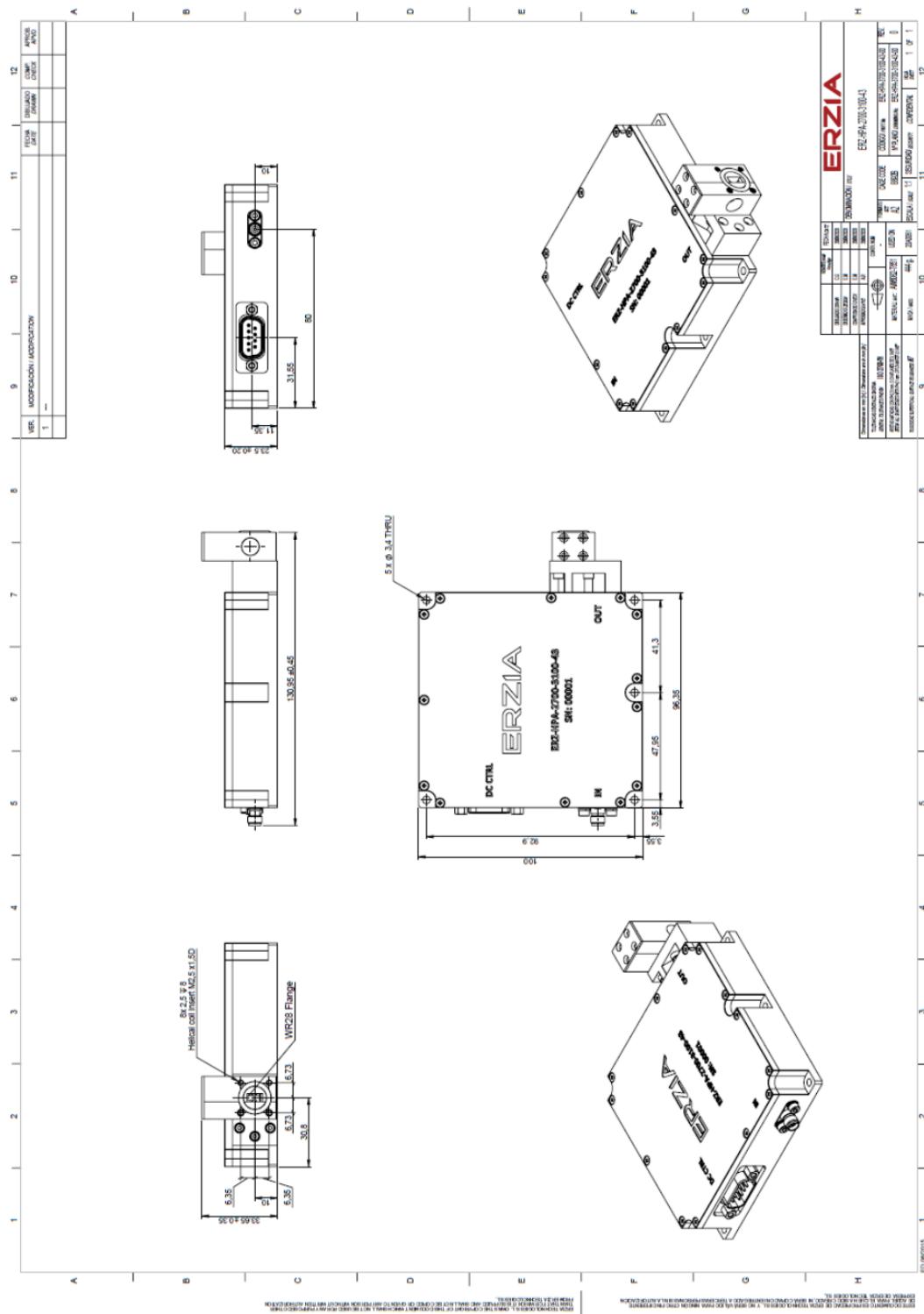
Operating Temperature:	-45 to +85 °C	(MIL-STD-810F, method 520.2)
Storage Temperature:	-55 to 125 °C	(MIL-STD-810F, method 520.2)
Vibration:	8g rms	(MIL-STD-810F, method 514.5)
Shock:	20g,11ms,saw-tooth	(MIL-STD-810F, method 516.5)
Acceleration:	15g	(MIL-STD-810F, method 513.5)

RoHS & REACH Compliance

This part is compliant with EU 2011/65/UE RoHS (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment) and REACH (Registration, Evaluation, Authorization and restriction of Chemical substances) directives.

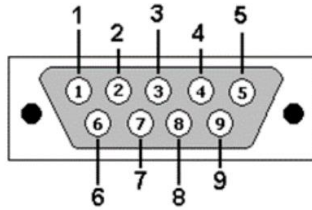


Mechanics and Housing



DC and Control Connector

D Sub-9 male connector



Pin No	Function	Description
1	+28 V Power Source	+ (24...32) VDC
2	+28 V Power Source	+ (24...32) VDC
3	Ground	Ground
4	Enable	TTL Signal OFF (0V to 0.8V) ON (2V to 5.5V)
5	Temperature Monitor	$V_o = -11.69 \text{ mV } C \times T + 1.8663 \text{ V}$
6	Power Ground	Power Ground
7	Power Ground	Power Ground
8	Ground	Ground
9	Current Sensor	$V_o = 0.1 \text{ V/A}$

Documentation and Test Reports

All modules are at least delivered with: Electrical Test Report, Certificate of Conformance, Certificate of Acceptance and Origin. Optionally, units can be environmentally tested (temperature, vibration...).

Option (HS): Heat Sink

A heat sink (HS) can be provided to allow the operation of Power Amplifiers. Please note that most power amplifiers need heat sink or appropriate heat dissipation strategy.

Space / Military Usage

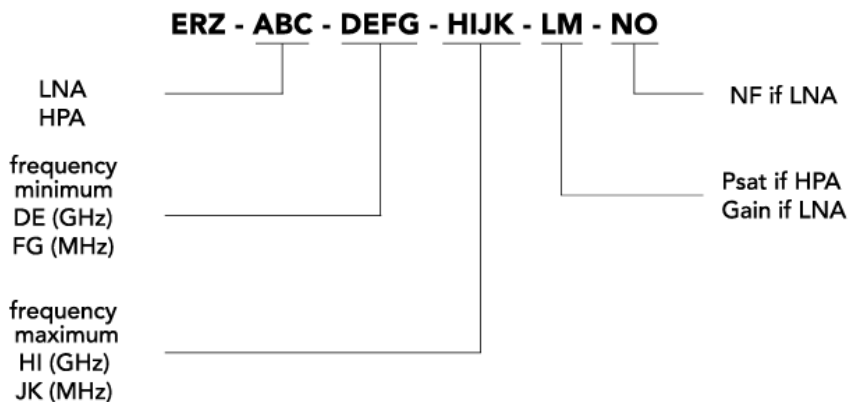
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

Customization and Extended Performances

ERZIA can fully design or adapt one of the existing RF amplifiers designs according to your specifications. Please contact us for additional information.

Model Number Codification

MODEL NUMBER



ERZIA

20201512_rev1.3

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